



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER OF PATENTS AND TRADEMARKS  
Washington, D.C. 20231  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/828,978	04/10/2001	Rainer Uhl	740105-70	7149

22204 7590 10/21/2002

NIXON PEABODY, LLP  
8180 GREENSBORO DRIVE  
SUITE 800  
MCLEAN, VA 22102

EXAMINER

FINEMAN, LEE A

ART UNIT	PAPER NUMBER
----------	--------------

2872

DATE MAILED: 10/21/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/828,978

Applicant(s)

UHL, RAINER

Examiner

Lee Fineman

Art Unit

2872

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 08 August 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☒ The proposed drawing correction filed on 08 August 2002 is: a) ☐ approved b) ☒ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Drawings***

1. The corrected or substitute drawings were received on 8 August 2002. The applicant submits three substitute drawings (figures 1a, 1b and 3). These drawings are disapproved. The specification is not in agreement with these drawings in that there is no reference to figures 1a and 1b. Further, the drawings are not a complete set of formal drawings as such the status of fig. 2 is uncertain. Further, the applicant has failed to submit a proposed new drawing for the examiner's approval or a current drawing with changes indicated in red.

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. The drawings fail to show the specimen on a surface of the holder facing away from the objective lens. Therefore, the feature(s) must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Art Unit: 2872

1. Claims 10-11, 15 and 16 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Regarding claims 10 and 11, it is recited that the specimen is on a surface of the holder facing away from the objective lens. The applicant is directed to figures 1 and 3, which illustrate the specimen on the surface of the holder (120) facing the objective lens. As such, neither the specifications nor the drawings supports this claimed limitation.

Regarding claim 15, which is dependent on claim 1, the combination recites laser light from outside a boundary and also light focused through the objective lens on the specimen. As illustrated in fig. 3, no light is focused through the objective lens on the specimen and in fig. 1 no laser light is used from outside a boundary. As such, no embodiment is disclosed that utilizes both the focused and laser light.

Claim 16 includes "a small cavity." Although the initial specification includes an aperture, it fails to disclose it specifically as a small cavity. As such the specific structure of the aperture being a cavity is not supported by the original specification.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in-

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or

(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

2. Claims 1, 4-5, 7-8, 10, 13, and 16 are rejected under 35 U.S.C. 102(b) as being anticipated by Doyle, U.S. Patent No. 4,758,088.

Regarding claim 1, Doyle discloses a microscope (fig. 3) comprising a light source (not shown but producing beam 78), an objective lens (34) positioned for focusing the light beam on the specimen (80) area for illumination and a reflector means (84) to reflect the light back through the illuminated area of the specimen.

Regarding claims 4, 5, 7, 8, and 16, Doyle discloses a reflector means (84) comprising a body having a concave surface and is hemispherically-shaped with a small cavity for allowing particles flung from the specimen by action of the light beam to be captured, which reflects essentially all of the illumination the light beam and at least a portion of the concave surface is reflective to at least a portion of the illumination light to produce oblique illumination of the specimen (fig. 3).

Regarding claim 10, Doyle discloses a transparent holder (83) for supporting the specimen (80) on a surface facing the objective lens (34).

Regarding claim 13, Doyle discloses a dichroic beam splitter (column 4, lines 10-11) for reflecting excitation light from the light source into the objective lens (34).

Art Unit: 2872

3. Claims 1-2, 9-10, and 13-14 are rejected under 35 U.S.C. 102(e) as being anticipated by White et al., U.S. Patent No. 6,169,289 B1.

Regarding claim 1, White et al. discloses a microscope (fig. 1) comprising a light source (11), an objective lens (20) positioned for focusing the light beam on the specimen (22) area for illumination (column 5, lines 19-21) and a reflector means (30) to reflect the light back through the illuminated area of the specimen.

Regarding claim 2, White et al. discloses a light source (11) as an Nd:YLF laser that produces both transmitted light (26) and epi-fluorescent illumination (33).

Regarding claim 9, White et al. discloses the objective lens is operable to be optically coupled to the specimen via an immersion liquid for transmitting the light beam from the light source to the specimen (column 6, lines 9-12 and figure 1 which shows the oil immersion optics between the objective lens and the specimen as well).

Regarding claim 10, White et al. discloses a transparent holder (23, column 5, lines 21-22) for supporting the specimen (22) on a surface facing the objective lens (20).

Regarding claim 13 and 14, White et al. discloses a dichroic beam splitter (19) for reflecting excitation light from the light source (11) into the objective lens (20). The dichroic beam splitter (19) is essentially impermeable to excitation light and essentially permeable with respect to fluorescent light (column 5, lines 47-54).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

Art Unit: 2872

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over White et al.

White et al. discloses the claimed invention except for being adaptable to produce a light beam of a wavelength that is variable. However it is well known to one having ordinary skill in the art at the time the invention was made to use variable wavelengths to view samples having different characteristics of emission and absorption spectrums. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to make the light source of White et al. adjustable to variable wavelengths to be able to view samples with different characteristics of emission and absorption spectrums.

5. Claim 4-5, 7-8, 12, 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over White et al. in view of Pinkel et al., U.S. Patent No. 5,982,534

White et al. discloses the claimed invention except for the reflector means being a concave, hemispherically shaped body with a small cavity for allowing particles flung from the specimen by action of the light beam to be captured therein and at least a portion of said reflector mean including a nonreflecting surface for transmitting laser light being emitted from outside a boundary surface of the reflector means to a reflecting boundary surface to the surface of the specimen that reflects the laser light at an angle such that total refraction of the laser light occurs at the boundary surface to the surface of the specimen by which fluorescent excitation of the specimen occurs. Pinkel et al. teaches a reflective means being a concave, hemispherically shaped body with a small cavity for allowing particles flung from the specimen by action of the

Art Unit: 2872

light beam to be captured therein (fig. 2, 205, 207 and column 11, lines 1-13) and at least a portion of said reflector means including a nonreflecting surface (123) for transmitting laser light (103, column 7, line 57) being emitted from outside a boundary surface of the reflector means to a reflecting boundary surface to the surface of the specimen that reflects the laser light at an angle such that total reflection of the laser light occurs at the boundary surface to the surface of the specimen by which fluorescent excitation of the specimen occurs (column 7, lines 22-30 and 49-51). It would have been obvious to one having ordinary skill in the art at the time the invention was made to form the body of the reflective means of White et al. as a concave, hemispherically shaped body of Pinkel et al. for the purpose of gathering more of the light beam. It also can be adapted to reflect essentially all of the illumination light beam. Thereby, at least a portion of the concave surface is reflective to at least a portion of the illumination light to produce oblique illumination of the specimen. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify White et al. to have a laser in the manner of Pinkel et al. to enable multi-modal viewing of the sample.

6. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Doyle in view of Allingham, U.S. Patent No. 3,497,377.

Doyle discloses the claimed reflector means except for an explicit written teaching that the body is transparent. Allingham teaches that a reflector means, or more commonly, a mirror is a surface having transparent characteristics with a backing of high reflectivity and opaqueness (column 1, lines 32-35). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify the reflector of Doyle so as to

Art Unit: 2872

include a body of transparent material to protect the reflective surface of the reflector means from damage.

7. Claims 9 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Doyle in view of Lanni et al., U.S. Patent No. 5,801,881.

Doyle discloses the claimed invention except for use of an immersion fluid to optically couple the holder to the reflector means and to optically couple the objective lens to the specimen. Lanni et al. teaches the use of an immersion fluid (not numbered) in figure 5 to optically couple the holder (4) to the reflector means (16) and to optically couple the objective lens (8) to the specimen (2). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Doyle to include immersion fluid to reduce losses and permit better image quality.

#### ***Response to Arguments***

8. Applicant argues that both Lanni et al. and Pinkel et al. fail to disclose an objective lens positioned for focusing a light beam produced by a light source on an area of a specimen for illuminating the area. Applicant defines the term focus as requiring the light beam to converge toward the specimen from the objective lens. Based on that definition of focus, the examiner withdraws the rejections using Lanni et al. and Pinkel et al.

Art Unit: 2872

9. It is noted by the Examiner that the objections of minor informalities in the specification and claim objections made in the previous Office Action have been withdrawn due to amendment by the Applicant.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lee Fineman whose telephone number is (703) 305-5414. The examiner can normally be reached on Monday - Friday 7:30 - 4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cassandra Spyrou can be reached on (703) 308-1687. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9318 for regular communications and (703) 872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4900.



LAF  
October 9, 2002



**Cassandra Spyrou  
Supervisory Patent Examiner  
Technology Center 2800**